together, they were fastened together with bolts or rivets. This makes it impossible for the parts to draw apart and thus greatly reduce the efficiency of the entire incubator.

The greatest departure from the original was made in the construction of the doors. The large doors opening out on hinges at the bottom seemed highly objectionable from the standpoint of convenience for those who regularly make use of the apparatus. Instead of providing each of the four main compartments with two single doors, one set of double doors was fitted to each division. These doors are made of heavy copper sheeting, and are two-walled. They are about three inches thick, and are so constructed as to fit perfectly into the fronts of the respective compartments, and to come together in such a way as to allow of no appreciable diffusion of heat. They swing on hinges at the sides of the divisions. The hinges are firmly attached by a special device. The doors are made to close tightly by means of fasteners situated at the tops and bottoms. Besides the single pair of doors for each large division, each small compartment is provided with its own movable glass door, as in the original model. The two-walled thick outer door, which is filled with air space, makes a third door unnecessary.

The approximate dimensions of the incubator are as follows: Length (outside measurement), 8 feet and 9 inches; height (not including ice box), 2 feet and 9 inches; width, 2 feet and 6 inches. Inside measurements of individual compartments: Divisions in section *A*, each 11 inches wide and 23 inches high; separate compartments in sections *B* and *C*, 8 inches wide and 23 inches high; and the inner receptacle or box in the refrigerator division, 23 inches cube.

The incubator rests on a strong wooden stand which is 30 inches high. At the refrigerator end there is a specially constructed platform by means of which the ice carrier has easy access to the ice box. To further facilitate the replenishing of the ice supply, the outer lid of the ice box has attached to it a stout cord, to the further end of which a heavy iron weight is fastened. The cord passes over a pulley which is fixed to the ceiling of the room.

The apparatus has been in operation for almost a year, and has proved highly satisfactory. The temperatures in the different compartments have been practically constant, even when there were marked fluctuations in the temperature of the room. To obtain the maximum efficiency, however, the thermoregulator must be in good working condition, and the ice supply must be replenished at regular intervals. The incubator has been in operation during the warmest summer season as well as in the coldest winter months, with but very slight variations in the inner temperatures, except during a few days of last summer when the temperature of the room was far above blood heat.

Aside from tests made by myself frequently, a rather exhaustive investigation of the constancy of the temperature of the different compartments was made by certain members of the Yale biological department in connection with their determination of the temperature coefficient of the rate of reproduction of *Paramecium aurelia*.[2] The temperature in each compartment was recorded by a tube thermometer, a maximum and minimum registering thermometer, and in one chamber also by a thermograph. In their report of the investigation we find the following statements.

> The temperatures of the various compartments were not only kept practically constant, but, which is more important from the standpoint of these experiments, the very slight variations which occurred, appeared practically the same in all the compartments simultaneously.

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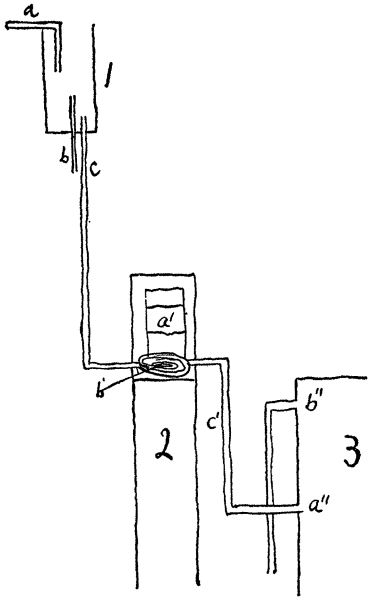
A convenient 20° incubator

An incubator that will work satisfactorily with gelatin culture media during the hot summer and in our usually superheated laboratories in winter is a great desideratum. A number of expensive devices of this character

[2] Woodruff and Baitsell, *American Journal of Physiology*, XXIX., 147–155, 1911.

are on the market. The apparatus here described may be set up by any plumber at a very small expense—possession of refrigerator and incubator assumed.



(1) Small tank for constant head, about 1 ft. in each dimension. *a*, inflow; *b*, overflow; *c*, lead pipe. (2) Refrigerator. *a'*, ice; *b'*, flat coil under ice; *c'*, outflow to incubator. (3) Incubator. *a''*, cold water inflow; *b''*, overflow; thermometer and burner omitted.

The diagram explains the construction. The constant-head tank is placed 3–4 feet above the refrigerator. I have used ⅜ in. lead pipe with twelve turns under the ice (slightly larger would be better). With rather soft artificial ice the water flowing into the incubator has a temperature of about 14° C. The incubator temperature desired is, of course, determined by the thermo-regulator. I have been using a small Reichert regulator and natural gas. Under these rather unfavorable conditions I find a range of about 1° C. around 20° C. The results obtained in growing cultures have been entirely satisfactory during the past four years.

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THE AMERICAN ASSOCIATION OF MUSEUMS

THE American Association of Museums held its seventh annual meeting in New York City from June 4 to 7. There was a large number of members in attendance and the convention may be considered in every way a success. Sessions were held at the American Museum of Natural History, the Metropolitan Museum of Art and the Museum of the Brooklyn Institute of Arts and Sciences. Addresses of welcome were made by Dr. Henry Fairfield Osborn, president of the American Museum of Natural History; Mr. Robert W. de Forest, secretary of the Metropolitan Museum of Art, and Mr. Edward L. Morris, acting curator-in-chief of the Museum of the Brooklyn Institute of Arts and Sciences, and the following papers were read:

"Notes on Russian Natural History Museums," by A. R. Crook.

"An Adaptation of the Goodyear Classification of the Fine Arts to the Dewey System of Numbering," by Laura M. Bragg.

"The Lasting Qualities of a Mounted Mammal Skin," by Robert H. Rockwell.

"The Preparation of Ecological Invertebrate Groups," by Roy W. Miner.

"Wild Life of the Far East," illustrated by motion pictures, by Cherry Kearton.

"The Value of Photographs and Transparencies as Adjuncts to Museum Exhibits," by Caroline L. Ransom.

"The Care and Classification of Photographs at the Metropolitan Museum of Art," by Ethel Pennell.

"The Function of a Museum," by Paul M. Rea.

"The Training of Museum Trustees," by Charles Louis Pollard.

"Boards of Trustees and the Executive Officers of Museums," by Henry L. Ward.

"Why is a Museum," by Chester L. Boone.

"Laboratory and Museum Shelving," by Milton J. Greenman.

"Conveniences in Installation," by C. F. Millspaugh.

"Glossary of Art Terms," by Henry W. Kent.

"The Local Flora Problem of a Small Museum," by Eva W. Magoon.

"The Possibilities of Botanical Exhibits," by E. L. Morris.

"The Duty of American Zoologists to Wild Life," by William T. Hornaday.

"Method of Exhibiting Insect Collections," by Frank C. Baker.